City of Norco

Circulation Element Update

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(Revised June, 1993)

Prepared by

Robert Bein, William Frost & Associates
14725 Alton Parkway
Irvine, California 92713-9739

JN 27492

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CITY OF NORCO

CIRCULATION ELEMENT UPDATE

MAY 1992

1. INTRODUCTION TO THE CIRCULATION ELEMENT

Reliance on the private automobile, not only for commuting to work but for shopping, educational and social activities, is a necessity for a vast majority of Southern California residents. The unmatched freedom provided by the automobile and its associated system of freeways and arterial streets provides the expectation that timely and convenient access can be made of the far ranging assets of Southern California, ranging from skiing in the mountains and then, on the same day, surfing in the ocean.

The current City of Norco Circulation Element, originally adopted in 1976, has been amended several times since its adoption. The analysis conducted for the update of the Circulation Element clearly demonstrates that the maintenance of a high level of service on the circulation system is under extreme pressure, and, therefore, the challenge of maintaining these expectations is formidable.

1.1 PURPOSE OF ELEMENT

The purpose of the Circulation Element is to provide for a safe, convenient, and efficient circulation system for the City. In order to meet this objective, the Circulation Element has been designed to accommodate the anticipated transportation needs based on the estimated intensities of various land uses within the City and immediate area. This element describes the extent of physical improvements needed to accommodate anticipated traffic demand and also introduces other techniques which can be used to improve and maintain an acceptable level of service for the City's circulation system.

The element is also intended to serve as a basic plan for other infrastructure systems such as sewer lines. As the State's General Plan Guidelines indicate, the Circulation Element is actually an infrastructure plan which "concerns itself with the circulation of people, goods, energy, water, sewage, storm drainage and communications."

1.2 SCOPE AND FORMAT OF ELEMENT

This element is composed of four sections. The first section, the Introduction, includes a description of the Element's purpose and related plans and programs. The second section which follows contains the City's goals and policy statements for improving circulation in Norco. The third section is the Circulation Plan, which identifies standards for existing and future circulation systems, defines the City's service level objectives to be achieved by the circulation system, and the future travel demand. Also included in the Circulation Plan is a discussion of alternate modes of transportation, and the City's infrastructure network. The fourth section of the Circulation Element contains the implementation program which contains specific implementation measures to realize the Element's Goals and Policies.

2. CIRCULATION ELEMENT GOALS AND POLICIES

The City's primary circulation goal is to provide a circulation system that has adequate capacity to meet the existing and future travel demands.

Future travel demand has been estimated in close correlation with the expected land uses and specific plan developments within the City and the immediate areas. The year 2010 has been selected as the build-out year for the purpose of travel demand forecast. (Section 3.1.5 deals specifically with travel demand forecast).

In the year 2010 the population of the City of Norco is projected to be approximately 30,000. This will be only a small increase over the 1990 census population of 23,302. However, substantial commercial and industrial growth is expected in the City over the next 20 years. At build-out, the City is projecting approximately six million square feet of commercial space and over three million square feet of industrial space.

2.1 CIRCULATION SYSTEM ISSUES AND PROBLEMS

Under current traffic and street development conditions, the major issues are as follows:

- Distribution and handling of commuter traffic;
- Conflicts between automobile traffic and equestrian/pedestrians;
- Improving circulation and access within the Gateway Specific Plan Area;
- Maintaining and improving the transportation system; and
- Development of an adequate circulation system within the Norco Hills area.

A study of the arterials and intersections selected by the City for review indicated that most of the Collectors and Major Arterials in the City are currently operating at acceptable Level of Service C or better. Table 1 summarizes the existing (1991) link ADT and Level of Service. Capacity analysis performed at the selected intersections also indicates that most of the intersections are operating at an acceptable Level of Service. Table 2 summarizes the existing (1991) Level of Service of the selected intersections.

The City is concerned that certain segments of collectors and major arterials within the City are used to serve through traffic or to bypass congestion on freeways. The following by-pass routes were noted:

Table 1 : Existing Arterial Segment Average Daily Traffic Volumes and Level of Service

Roadway Segment	Number of Lanes	Existing (1991)	
		ADT	LOS
Hamner Avenue			
1st St to 3rd St	4	22,800	C
3rd St to 6th St	4	17,550	C
At Santa Ana River Bridge	2		
Sixth Street			
I–15 to California Ave	4	17,560	C
California Avenue			
North Dr to 6th Ave	2	12,490	D
North Drive			
California Ave to City boundary	2	9,740	C
River Road			
South of City boundary	2	8,060	B
Corydon St to 2nd St	2	15,170	E
Parkridge Avenue			
1st St to 2nd St	2	4,210	A
Yuma Drive			
Hamner Ave to City boundary	2	4,700	A
First Street			
Parkridge Ave to Hamner Ave	2	1,050	A
Second Street			
Parkridge Ave to Hamner Ave	2	5,000	A
Hamner Ave to Corona Ave	2	6,190	A
Third Street			
Riverside College to Hamner Ave	4	2,080	A
Forth Street			
Hamner Ave to Hillside Ave	2	3,940	A
Fifth Street			
Norco Dr to Hamner Ave	2	5,660	A
Hamner Ave to Hillside Ave	2	1,460	A
Norco Drive			
Bluff St to 5th St	2	7760	A
5th St to Hamner Ave	2	3,480	A
Bluff Street			
River Rd to Norco Dr	2	1,310	A
Corydon Ave			
River Rd to Norco Dr	2	3,780	A

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TABLE 2

EXISTING LEVEL OF SERVICE AT SELECTED INTERSECTIONS

JN 27492

Intersection	Level of Service	
	AM Peak	PM Peak
*North Drive/California Ave	B	B
*6th St/California Ave	B	C
6th St/Hamner Ave	C	C
5th St/Hamner Ave	C	C
2nd St/Hamner Ave	D	D
*Bluff St/River Rd	D	D
Corydon Ave/River Rd	C	C
2nd St/River Rd	B	B
*First St/Parkridge Ave	B	B

* - Unsignalized Intersections

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- North Drive/California Avenue/Sixth Street/Interstate 15
- Interstate 15/Second Street/Pacific Avenue/Lincoln Avenue (in City of Corona)
- Archibald Avenue (in Riverside County)/River Road/Route 91

These bypass routes are used primarily by commuters and have the potential to negatively impact traffic safety in the City of Norco. The majority of this traffic is early morning and late evening, and has a tendency to exceed the posted speeds on certain streets. This high volume of traffic also creates access problems onto major arterials and collector streets (i.e., access to Sixth Street from Sierra Avenue and Valley View Avenue). In addition, because of the volumes of traffic utilizing certain streets, there is intrusion by this type of traffic taking shortcuts through residential areas, thus impacting these areas with an amount of traffic not usually experienced on local streets.

This type of traffic also presents certain conflicts with equestrian and pedestrians uses on the roadways within the City. Motorists from outside the City are usually not aware of the problems associated with equestrian use within public right-of-way and potential hazards which are created. The City has taken steps to warn motorists of equestrian uses and the existence of livestock within the community. However, this awareness needs to be promoted to ensure that the equestrian lifestyle of the community is not jeopardized in any way. In addition to appropriate signage, the City is continuing to provide adequate and necessary improvement of horse trails to promote the safe use of the roadways by equestrians. The City also needs to evaluate the needs of pedestrians, especially on major arterials to ensure that the pedestrian has a safe environment and is protected from the automobile.

The City has recently adopted the Gateway Specific Plan. The traffic analysis for the specific plan predicted an ultimate daily traffic count of over 71,000 additional two-way trips per day as a result of the plan build out. This means that the importance of adequate traffic control measures and a well-planned circulation system cannot be over emphasized. The Gateway Specific Plan calls for the following major traffic circulation system modifications and improvements to the project area:

1. Widening and realignment of Parkridge Avenue, First Street, Second Street, and Mountain Avenue.

2. Provide cul-de-sac at Pacific Avenue north of its intersection with First Street.

3. Installation of landscaped medians on Hamner Avenue.

4. The extension of Yuma Drive to First Street and Mountain Avenue.

5. Provide for the extension of Mountain Avenue between First Street and the proposed extension of Yuma Drive.

6. Provide major intersection traffic control measures and landscape treatments.

7. Provide a street tree program on all project area roadways.

8. Provide for vacation of existing right-of-way no longer needed.

9. Continue to work with Caltrans to ensure the Yuma Drive Interchange is built.

Alternative modes of transportation, such as public transportation, should be promoted within the City for persons who choose not to utilize the automobile for various reasons. The Riverside Transit Agency (RTA) provides a fixed bus route service and a Dial-A-Ride service within the City of Norco and other portions of Western Riverside County. The City should continue to cooperate with RTA for the provision of this bus service system, and should take steps to establish adequate bus shelters to increase public recognition and use of the transit system.

One of the last major areas for development within the City of Norco will be the area along the eastern boundary in the Norco Hills. It has long been anticipated that Norco Hills Drive, which flows northeast from Yuma Drive, would meander through the hills and eventually connect to Sixth Street. This backbone system will be the major collector street for development of the hillside areas. It is anticipated that when development occurs, that this circulation system will be developed.

One of the main issues facing future travel demand in the City is the distribution of traffic across the Santa Ana River. There are currently three river crossing points in the vicinity of the City of Norco, the Interstate 15 crossing, the Archibald Avenue crossing, and the Hamner Avenue crossing. The Interstate 15 crossing is located at the north-central boundary of the City. It provides three through freeway lanes in each direction of travel. The Hamner Avenue crossing is located at the north-central boundary of the City. It is a two-lane bridge parallel to Interstate 15. The Archibald Avenue crossing is located at the western end of the City. It is a two-lane bridge extended from River Road along the

southwest boundary of the City. The County of Riverside general plan shows a future crossing extending from Etiwanda Avenue from the north to intersect with Arlington Avenue at the boundary of the cities of Norco and Riverside. This planned crossing may be eliminated due to environmental concerns. The Savi Ranch Estates EIR proposed an alternative river crossing site near the Etiwanda crossing which would extend the future Jurupa Avenue westerly across the Santa Ana River in an east-west direction.

If the Etiwanda crossing is eliminated without replacement in the vicinity, the use of California Avenue and Sixth Avenue in the City of Norco as through traffic facilities will be more profound in the future.

The goals and policies presented below emphasize the importance of establishing a circulation system which can support existing and future travel demands. The implementation measures identify specific programs and infrastructure improvements designed to achieve service level objectives.

2.2 SAFE, CONVENIENT, AND EFFICIENT TRANSPORTATION SYSTEM

The City desires the development of a circulation system intended to provide for transportation needs generated by existing and future development.

GOAL 1:

A circulation network integrated with planned land use which is responsive to the needs for efficient, safe, and economic movement of people and goods.

Policy 1.1: Develop a circulation system of City streets, excluding freeways, that is capable of serving existing traffic and expected future increases in traffic.

Policy 1.2: Follow appropriate City or County standards for circulation element roadways in designing and constructing future street improvements.

Policy 1.3: Take a leadership role in the preparation of a regional traffic mitigation program designed to resolve regional traffic issues impacting the City of Norco.

Policy 1.4: Logically relate local street patterns to the overall network of arterial and collector streets as provided for in the Circulation Network. Through traffic on interior residential streets should be minimized.

Policy 1.5: Establish a signalized arterial street system that will provide an acceptable level of service during peak hours under build out conditions.

Policy 1.6: Develop a program for general mitigation fees for roads and traffic signals.

Policy 1.7: Require Level of Service C or better for roadway segments and Level of Service D or better for intersections at peak hours.

Policy 1.8: Develop a seven-year capital improvement program to maintain or improve the traffic Level of Service and transit performance standards that have been adopted by the County of Riverside as a part of its Congestion Management Program for the City.

Policy 1.9: Encourage the reduction of vehicle trips through the implementation of Transportation Demand Management (TDM) techniques, such as requiring major employers to prepare Transportation Management Plans with provisions for carpooling and vanpooling, flexible work hours or other techniques.

Policy 1.10: Support regional Transportation Demand Management strategies developed by the Riverside County Transportation Commission.

Policy 1.11: Prepare traffic studies for the following areas of special concern to identify problems and appropriate mitigation measures:

1. Sierra Avenue between Sixth Street and Valley View Avenue, including the intersection of Sixth Street and Sierra Avenue, and Valley View Avenue between its intersection with Sierra Avenue and Second Street.

2. California Avenue between North Drive and Sixth Street.

3. Second Street between Hamner Avenue and River Road.

4. Western Avenue between Fifth Street and Belgian Drive.

2.3 ALTERNATE TRANSPORTATION MODES

Alternate modes of transportation, such as public transportation, bicycles and equestrians are used by those who do not have access to automobiles and by those who choose to leave their cars at home. The Riverside Transit District (RTD) provides public transportation

service within the City of Norco and other portions of western Riverside County. Bicycle facilities need to be considered, in conjunction with circulation system improvements and trails for equestrians and pedestrians to reduce dependency on private automobiles.

GOAL 2: Encourage the use of alternate transportation modes.

Policy 2.1: Continue to cooperate with the Riverside Transit Agency for the provision of public bus service (fixed route and Dial-a-Ride).

Policy 2.2: Establish bus shelters at RTA stops to increase public recognition and use of the local and regional transit system.

Policy 2.3: Cooperate with Caltrans and the County of Riverside in providing sites and improvements for park-and-ride facilities.

Policy 2.4: Continue to develop and improve the City's system of pedestrian/equestrian trails to meet the needs of the community.

Policy 2.5: Provide a system of bicycle facilities (paths, lanes, and routes) in conjunction with circulation system roadway improvements.

Policy 2.6: Continue to cooperate in the development of the Santa Ana River Trail through the City.

2.4 SEPARATION OF TRAFFIC

Separating heavier non-residential traffic, particularly commuter traffic, from residential areas preserves neighborhood character and safety. Higher capacity roadways are intended to accommodate this heavier traffic to reduce or avoid impacts on residential areas.

GOAL 3: Separate vehicular traffic associated with commuting and commercial users from residential areas.

Policy 3.1: Provide a circulation network which includes higher capacity for roadways for commuters and commercial users to avoid overflow into adjacent residential areas.

Policy 3.2: Provide safe and convenient equestrian/pedestrian access between residential neighborhoods and the parks and open space and schools which service those neighborhoods.

Policy 3.3: Establish a system of truck routes which reduces truck traffic on residential streets.

Policy 3.4: Design residential street systems to reduce through traffic.

Policy 3.5: Design local streets so as not to create "short-cuts" by linking arterial roads.

Policy 3.6: Provide safe crossings of major arterials for pedestrians and equestrians.

Policy 3.7: Preserve existing mature trees as separation between streets and adjacent property or trails. This can be accomplished by either roadway or improvement realignments or relocation of the trees with feasibility determined on a project by project basis.

2.5 PARKING

Adequate and convenient parking is an essential part of an effective circulation system. The provision of suitable off-street parking can increase the overall efficiency of the circulation system by promoting freer and safer movement of traffic along roadways.

GOAL 4: Ensure the provision of adequate off-street parking for all land uses.

Policy 4.1: Require all new development to provide adequate off-street parking based on expected parking needs.

Policy 4.2: Provide adequate loading areas within off-street parking areas for all commercial and manufacturing land use.

3. THE CIRCULATION PLAN

The Circulation Plan consists of three components: the Street Network, the Public Transportation Network, and the Infrastructure Network. Each component consists of the following sections:

Street Network
- Existing Circulation System
- Truck Routes/Equestrian Trails
- Traffic Level of Service Standards
- Future Travel Demand
- Revised Circulation Element

Public Transportation Network
- Fixed Route System
- Dial-a-Ride System

Infrastructure Network
- Water System
- Sewage System
- Storm Drain

3.1 STREET NETWORK

3.1.1 EXISTING CIRCULATION SYSTEM

The City of Norco is served by a network of local streets, collector streets, major arterials and the Interstate 15 freeway.

The original Circulation Element classified city streets as Local, Collector or Major Streets (Exhibit 1).

MAJOR ARTERIAL

Major Arterial classification requires 100' to 150' of right-of-way and 86' curb to curb width. It is intended to serve primarily through traffic with limited access to driveways. Streets designated as Major Arterials include:

Norco Circulation Element Update

Existing Roadway Classification

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Exhibit 1

Hamner Avenue

Hamner Avenue is the major north-south road through the City linking the City of Corona to the south and the Jurupa Specific Plan of Riverside County to the north. The name of the road changes to Main Street in the City of Corona. Serving the strip commercial along both sides of the road, Hamner Avenue currently provides two through lanes in each direction separated by a two way left turn lane. Hamner Avenue was designated as State Route 31 prior to the completion of Interstate 15 through the City. It has been removed from State Route classification after the completion of Interstate 15 and is currently under the jurisdiction of the City of Norco. The two lane bridge on Hamner Avenue immediately outside the northern boundary of the City is one of the major crossings of the Santa Ana River.

North Drive (between California Avenue and City boundary)

North Drive is a short east-west arterial at the northeastern corner of the City. This two lane roadway is the only direct link between the Cities of Norco and Riverside. It is bordered by residential zones along the north side and commercial zones along the south side. North Drive becomes Arlington Avenue in the City of Riverside.

California Avenue (between North Drive and Sixth Street)

California Avenue is an existing north-south arterial connected to North Drive, the only direct link to the City of Riverside. It is a two lane roadway bordered by residential zones along both sides and commercial zones at the intersection of 7th Street and 6th Street.

Sixth Street (between Hamner Avenue and California Avenue)

Sixth Street is an existing east-west street linking Hamner Avenue, Interstate 15 and California Avenue. It is currently a four lane divided arterial bordered by commercial zones with a Western theme. Sixth Street is one of the two arterials in the City of Norco connected to Interstate 15 by a diamond interchange. Caltrans operates an existing Park-and-Ride lot of 100 spaces at the northeast corner of the intersection of Hamner Avenue and Sixth Street.

River Road (between Santa Ana River Crossing and Neatherly Circle)

River Road is an existing four lane road at the western boundary of the City. It provides one of the major Santa River Crossings to the Jurupa Community Plan area to the north and connects with the City of Corona to the south. Portions of River Road share right-of-way with the City of Corona.

COLLECTOR

Collector classification requires 60' to 88' of right-of-way with 40' of pavement from curb to curb. It is intended to collect traffic from local streets and distribute traffic to Major Arterials. Streets currently designated as Collectors include:

First Street (between Parkridge Street and Hamner Avenue)

First Street is an existing two-lane east-west Collector serving the Gateway Specific Plan area.

Second Street (between River Road and Hillside Drive)

Second Street is an existing two-lane east-west Collector serving the northern portion of the Gateway Specific Plan area and the residential area west of Hillside Drive. It is one of the two roads connected to Interstate 15 by diamond interchanges. A Park-and-Ride lot with 200 spaces is planned near the intersection of Hamner Avenue and Second Street.

Third Street (between Riverside Community College and Hamner Avenue)

Third Street is an existing four-lane divided east-west Collector serving the Riverside Community College.

Fourth Street (between Clark Avenue and Hillside Drive)

Fourth Street is an existing two-lane east-west Collector serving the central residential areas.

Fifth Street (between Norco Drive and California Avenue)

Fifth Street is an existing east-west Collector serving residential and mixed-use areas in the central portion of the City. It is the main collector providing access to the California Rehabilitation Center and the U.S Naval Weapons Assessment Center in the City. Its pavement varies from two to four lanes.

Norco Drive (between Fifth Street and Hamner Avenue)

Norco Drive is an existing two lane road traversing in a northeast direction linking Hamner Avenue and Interstate 15 to the north and Corydon Avenue to the south. Norco Drive is bordered predominantly by residential zones except at the intersection with Hamner Avenue.

Hillside Avenue (between Sixth Street and Fourth Street)

Hillside Avenue is an existing two-lane collector serving north-south movements. It is bordered primarily by residential zones.

Corydon Avenue (between Fifth Street and River Road)

Corydon Avenue is an existing two-lane road traversing in a northeast direction linking River Road to the south and Norco Drive to the north. Corydon Avenue is bordered predominantly by residential zones.

Bluff Street (between River Road and Corydon Avenue)

Bluff Street is a short segment of two lane road linking the Major Arterial River Road and Collector Corydon Avenue. It is bordered by residential zones.

Yuma Drive (between Hamner Avenue and City boundary)

Yuma Drive is an existing two lane road along the southern boundary of the City. An interchange with Interstate 15 is currently in the planning stage. The new interchange will replace the existing overcrossing and realign Yuma Drive to form a four way intersection with Hamner Avenue and Mountain Avenue according to the Gateway Specific Plan.

Parkridge Avenue (between Cota Street and Second Street)

Parkridge Avenue is an existing two lane collector at the southwestern boundary of the City. Portions of Parkridge Avenue share right-of-way with the City of Corona. It is one of the collectors which link the southwestern part of the City with the major north-south arterial.

River Ridge Drive (between Norco Drive and Alhambra Street)

River Ridge Drive is a short two lane segment of approximately 700 ft long north of Norco Drive. It has been included as a Collector through General Plan Amendment 84-6 which specified that it should be designed and constructed to accommodate expected traffic volumes, school children walking to school and provide a physical division between the animal keeping and residential land uses in the area.

LOCAL STREET

Local Street classification requires 60' of right-of-way with 26' to 36' of pavement from curb to curb. It is intended to provide access to adjacent properties and serves as an easement for utilities. All streets not classified as Major Streets or Collector are included in this classification.

INTERSTATE 15

Interstate 15 which traverses in a north-south direction through the central part of the City is not under the jurisdiction of the City. It is currently a six lane freeway which provides access to the City of Norco through two diamond interchanges at Second Street and Sixth Street. A third interchange will be constructed at Yuma Drive at the southern boundary of the City of Norco. Grade separation structures along Interstate 15 in Norco include an undercrossing at Third Street and overcrossings at Fourth Street, Fifth Street and Yuma Drive. The 1991 Route Concept Report of Interstate 15 prepared by Caltrans indicates that this segment of freeway is currently operating at Level of Service D with an Annual Average Daily Traffic volume of 82,000 and 7,380 vehicle per hour at peak hour. The Route Concept Report recommended future construction of a total of eight general traffic lanes and two high occupancy vehicle lanes for this segment of the freeway. The Route Concept Report did not indicate a schedule of implementation.

Caltrans operates a 100 space Park-and -Ride facility at the northeastern corner of Hamner Avenue and Sixth Street off the Interstate 15 interchange with Sixth Street. A new Park-and -Ride lot with 200 spaces is planned west of Hamner Avenue on West Four Wheel Drive near the Interstate 15 / Second Street interchange. This facility is expected to be completed and operational in 1994.

Exhibit 2 shows the existing (1991) Average Daily Traffic volumes on the Collectors and Major Streets and peak hour volumes at selected intersections. Traffic count data is presented in Appendix E in a separate volume.

3.1.2 TRUCK ROUTES

The City of Norco has designated and established certain streets and portions of streets as commercial vehicle truck routes. The designated truck routes are intended to indicate arterial streets that would be used for truck movement in excess of the weight as designated in the City ordinances for movement through the City. In accordance with both local and state law, truck movement for the purpose of making deliveries within the City can use the most direct route for the particular delivery location.

The following streets and portions of streets are designated and established as commercial vehicle truck routes:

1. Hamner Avenue in its entirety through the City;

2. Sixth Street from Hamner Avenue to California Avenue;

3. California Avenue from Sixth Street to North Drive;

4. North Drive in its entirety;

5. River Road in its entirety.

Appropriate signs have been erected, indicating the streets which are affected. The signs indicate "Truck Route" in letters that are not less than four (4) inches in height and are located at all intersections of designated truck routes within the boundary of the City.

Norco Circulation Element Update

Existing (1991) ADT Volumes

And Peak Hour Volumes At Selected Intersections

Robert Bein, William Frost & Associates

Exhibit 2

3.1.3 PEDESTRIAN\EQUESTRIAN TRAILS

The motto "City Living in a Rural Atmosphere" arches over the profile of a horse on the City of Norco's official seal. This motto symbolizes a central long-term goal of Norco's community leaders. The voters of Norco have, for 25 years, maintained the majority of their City's land as animal-keeping properties of one-half acre or more.

The streets of Norco are lined with horse trails, with the exception of Hamner Avenue, the main thoroughfare through town. Steadfast in its commitment to maintaining a rural atmosphere, the City has eschewed the standard suburban sidewalk treatment in favor of decomposed granite pedestrian/equestrian trails.

This elaborate system of over 68 miles of well-maintained trails is regarded as a major asset of the community, and is an amenity that many residents have moved to the City to take advantage of. The majority of all lots have direct access to this trail system. It affords an opportunity to ride through the urban environment and move from there into local and regional areas such as the Norco hills and the Santa Ana River.

A typical trail is twelve (12) feet wide located along one side of the street with three (3) feet high timber fencing separating the trail and a tree-lined parkway. The six (6) foot wide parkway serves as a buffer between street pavement and the equestrian trail. The trails are marked with special equestrian signs where they cross roadways and are signed with the W45 (Equestrian Symbol) warning signs and supplemented by the W80 (xing) warning signs. Exhibit 3 illustrates the existing equestrian trail system in the City of Norco.

In 1955, the Santa Ana River was recommended to the State Parks Commission as a multi-purpose recreation area. Since that time, the river corridor has been viewed by many as an important regional recreation and open space resource. The river corridor covering three counties has always had the potential to include a regional trail system from the crest of the San Bernardino Mountains to the Pacific Ocean, some 110 miles long. In 1969, the first "Crest to Coast Trail Event" was held, drawing attention to the significance of the river corridor and the need for a continuous trail system.

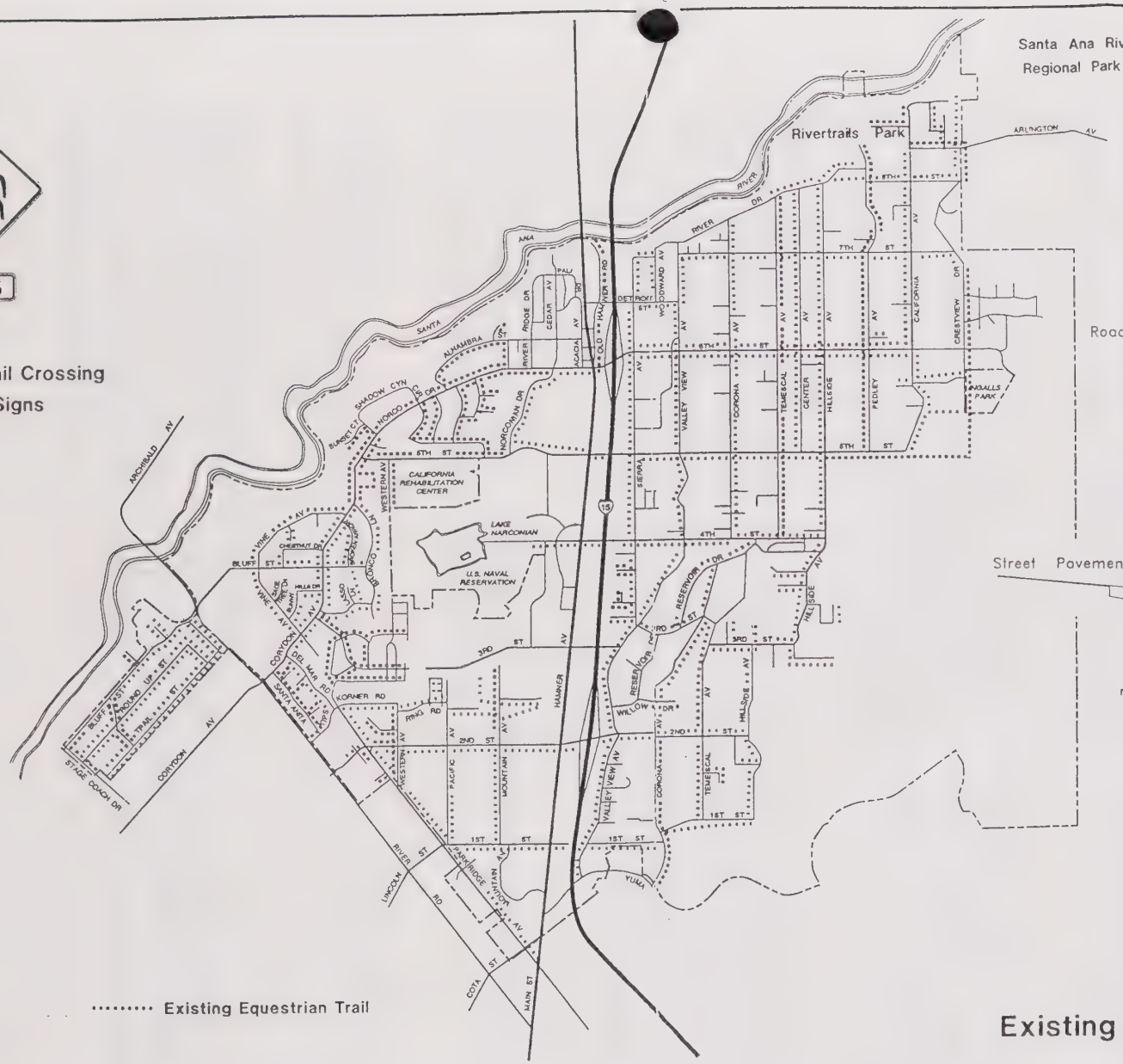
The County of San Bernardino Regional Parks Department has completed a comprehensive study of the river corridor covering the counties of San Bernardino, Riverside, and Orange. The overall goal of this project is to promote and to plan for a continuous multi-use regional trail system along the Santa Ana River corridor linking the Pacific Ocean and the Pacific Crest Trail. The City of Norco is located approximately halfway between the Pacific Ocean

W45

XING

W80

Equestrian Trail Crossing
Warning Signs



Roadway Right-of-Way

6' Parkway | 12' Equestrian Trail

Pole Fencing

3'

2%

Street Pavement

Equestrian Trail
Typical Cross-Section

0 3000'

····· Existing Equestrian Trail

Norco Circulation Element Update

Existing Equestrian Trail System

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Exhibit 3

and the San Bernardino Mountains. This project envisions the expansion of the City's local trail system with proposed points of connection to the river corridor at Corydon Avenue and Fifth Street, Old Hamner Avenue, and Pedley Avenue.

The City's adopted Master Plan for Parks, Recreation and Open Space identifies the existing equestrian trail system and makes recommendations for future implementation/improvement. The trail system should provide circulation for pedestrian, equestrian and bicycle use. This will accommodate the community's need for various modes of transportation and reduce conflicts between them. The system includes several types of trails.

The trail system hierarchy organizes the community's circulation needs into a coherent pattern of movement which will minimize conflicts between pedestrians and equestrians. This system defines each trail according to its function and level of enhancement as being primary, secondary or tertiary. A brief explanation of the trail types is as follows:

Primary Trails:
The primary trail system includes the major circulation routes which carry the bulk of traffic volume. This system will integrate pedestrian, equestrian and bicycle circulation within the town and minimize conflict through trail location and planting. The primary trails will connect major features throughout the community, including Riverside Community College, Norco Hills, the Santa Ana river, and the other community facilities (schools and parks).

Secondary Trails:
Secondary trails connect to the primary and to other features. They will carry moderate volumes of pedestrian and equestrian circulation.

Tertiary Trails:
Since the tertiary trails carry only a small volume of traffic, surfacing and planting will be minimal.

Use of Drainage Channel as Trail Corridors:
Drainage channels provide an already existing network of interconnections. By allowing access, these potential corridors can easily be incorporated into the trail system. Integration of the drainage channels will involve some surfacing and planting treatment as well as additional trail safety measures.

Natural Trails:

Natural trails are located away from the surface streets, generally on the edge of the town. These trails are important in enhancing the rural atmosphere because they give opportunities to experience open spaces. They can provide linkage to the regional trail system as well as local landscape features such as the Norco hills, the Santa Ana River and possibly Lake Norconian. These trails will accommodate hikers and equestrians, and in some situations, bicycles. Rest stops for pedestrians and equestrians should also be provided at intervals along the natural trails on public property.

3.1.4 TRAFFIC LEVEL OF SERVICE STANDARDS

In order to be consistent with the Riverside County Congestion Management Program (CMP), it is recommended that the City adopt the use of the Highway Capacity Manual method in the evaluation of intersection Level of Service (LOS). Level of Service is a qualitative measure of traffic flow. At intersections, it is based on the estimated delay experienced by the average driver. Levels of service are designated from LOS A being the best level to LOS F being the level at which the facility is overloaded and is characterized by stop-and-go traffic with extensive delay to drivers. Table 3 shows the Levels of Service for Signalized Intersections. LOS D is to be used as the minimum standard for intersections during peak hours. Based on the Riverside County definition of LOS C Average Daily Traffic volumes (Appendix B), the City desires to adopt the minimum standards of LOS C for the planning of roadway segments. LOS E should be used as minimum standard for CMP purposes as recommended in the CMP legislation. The Riverside County definition of highway capacity does not relate directly to the criteria of the Highway Capacity Manual which defines LOS of multi-lane highways in terms of maximum density and LOS of urban and suburban arterials in terms of average travel speeds.

3.1.5 FUTURE TRAVEL DEMAND

Future travel demand has been estimated in close correlation with the expected land uses and specific plan developments. Year 2010 has been selected as the build-out year for the purpose of travel demand forecast. Specific plans included in the travel demand forecast are Gateway Specific Plan (including the Interstate 15 Corridor Study), Norco Hills Specific Plan, Third Street Area Plan and Rancho La Sierra Specific Plan (City of Riverside). Savi Ranch Estate Specific Plan area which is immediately outside the northeast City boundary has also been included indirectly in the travel forecast analysis.

TABLE 3

LEVELS OF SERVICE FOR SIGNALIZED INTERSECTIONS

LEVEL OF SERVICE	STOPPED DELAY PER VEHICLE (SECONDS)
A	< 5.0
B	5.1 to 15.0
C	15.1 to 25.0
D	25.1 to 40.0
E	40.1 to 60.0
F	> 60.0

Level of Service A describes operations with very low delay, i.e., less than 5.0 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

Level of Service B describes operations with delay in the range of 5.1 to 15.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.

Level of Service C describes operations with delay in the range of 15.1 to 25.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

Level of Service D describes operations with delay in the range of 25.1 to 40.0 seconds per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level of Service E describes operations with delay in the range of 40.1 to 60.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high b/c ratios. Individual cycle failures are frequent occurrences.

Level of Service F describes operations with delay in excess of 60.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Source: Highway Capacity Manual, 1985,
Transportation Research Board, Washington D.C.

A travel demand forecasting model has been developed to estimate future traffic volumes. The Norco Transportation Model delineated 63 Traffic Analysis Zones (TAZ) within the City based on land uses and existing roadway locations. The existing network of Collectors, Major Arterials and the Interstate 15 freeway were used as basic transportation links within the model. Existing and build-out land uses were provided by the City for each TAZ. The model uses constant trip rates for each type of land use in trip generation. Future travel demand in terms of vehicle trips were estimated for each TAZ using trip generation rates recommended by the Institute of Transportation Engineers and San Diego Association of Governments. These trip generation rates were applied to the land use variables (such as number of dwelling units, square footage of commercial or industrial building, number of students etc.) of each TAZ to produce the number of vehicle trips generated by or attracted to each zone. The model classified trip production and attraction as home-base work trips, home-base non-work trips and non-home-base trips.

The Norco Transportation Model is compatible with the current RIVSAN model developed by Southern California Association of Governments (SCAG) with regard to method of analysis, traffic analysis zones grouping, highway network, external station traffic distribution and general consistencies in trip production and attraction. A RIVSAN 2010 run dated January 2, 1992 has been provided by SCAG as basis for compatibility check. The link (roadway) network in the RIVSAN run included the Etiwanda Avenue crossing of the Santa Ana River and the existing crossings at Hamner Avenue and Archibald Avenue. The RIVSAN model also shows Lincoln Avenue connected between First Street in Norco and Route 91.

Future land use assumptions within the City are not compatible with the RIVSAN model. The City of Norco build-out land use scenario is generally more intensive. The Norco Transportation Model also includes the future interchange of I-15 and Yuma Drive. This interchange and Yuma Drive have not been coded in the current RIVSAN model.

The Norco Transportation Model has been validated by 1991 ground traffic counts of collectors and major arterials.

Based on the land use parameters provided by the City, the total number of vehicle trips as a result of commercial and industrial build-out in 2010 is estimated at 196,000 vehicles per day while the total number of trips generated by residential units is 74,000 vehicles per day. Other public services will generate approximately 40,000 trips per day. With adjustments to reflect the different production and attraction characteristics of each generator, the City will experience a net attraction of approximately 100,000 daily vehicle trips in 2010.

Exhibit 4 shows the estimated build-out Average Daily Traffic volumes on the existing roadway network. It is noted that there will be heavy concentration of vehicle trips along Sixth Street and the central segments of Hamner Avenue. These concentration of trips which more than double the volumes estimated by the RIVSAN model are the result of the assumed full development of the commercial areas (25% construction coverage) along these streets. First Street and Second Street east of Hamner Avenue also show substantial increase in traffic volumes because of full commercial development and the RIVSAN assumption that Lincoln Avenue will be connected to Route 91.

The Norco Transportation Model shows some increase in volumes along Fifth Street in the vicinity of Hamner Avenue but the volumes are relatively low compared to Sixth Street. This is in contrast to the RIVSAN output which shows Fifth Street being utilized more than Sixth Street.

Estimated ADT at external links at Interstate 15, Arlington Avenue, Hamner Avenue and River Road are compatible to RIVSAN output because the Norco Transportation Model was set to accept RIVSAN estimated volumes at external stations.

Of the nine intersections selected by City staff for detail study, the build-out 2010 ADT volumes would warrant traffic signals at the four currently unsignalized intersections: California Avenue/North Drive, California Avenue/Sixth Street, Bluff Street/River Road, and Parkridge Avenue/First Street. Heavy turning movement at the intersections of Hamner Avenue/Sixth Street and Hamner Avenue/Second Street would result in unacceptable LOS at these locations.

3.1.6 REVISED CIRCULATION ELEMENT

Based on the estimated 2010 build-out ADT volumes on the existing roadway network, Hamner Avenue, Sixth Street and California Avenue would require three through lanes in each direction to maintain an acceptable LOS C. All other Collectors could provide acceptable LOS C with two through lanes in each direction. Exhibit 5 shows the proposed typical cross-sections of roadways which are grouped into the following classifications:

0 3000'

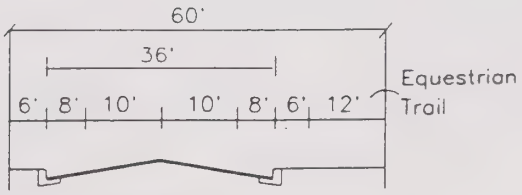
Norco Circulation Element Update

Estimated 2010 Build-Out Average Daily Traffic Volumes

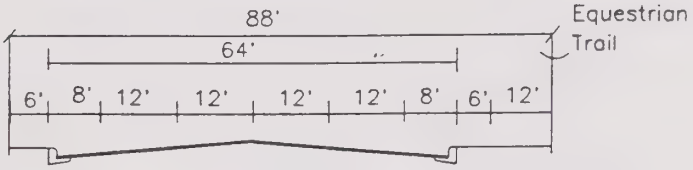
Robert Bein, William Frost & Associates

Exhibit 4

NorSe2

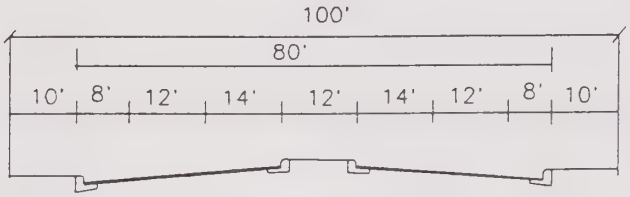


Local



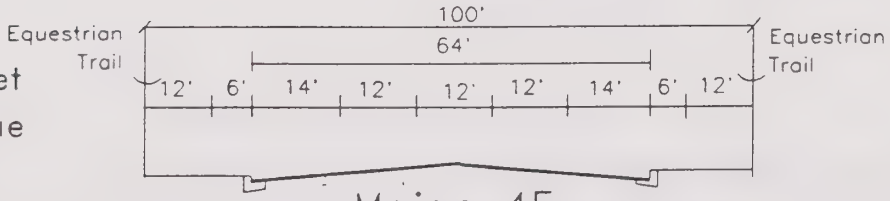
Collector

River Road



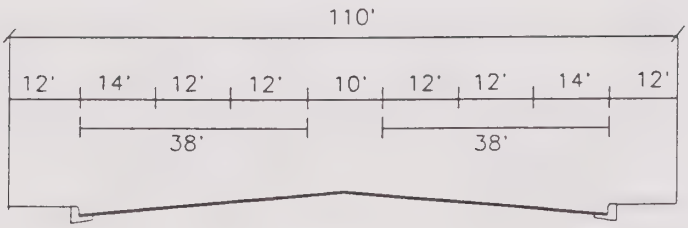
Major–4

Sixth Street
California Avenue

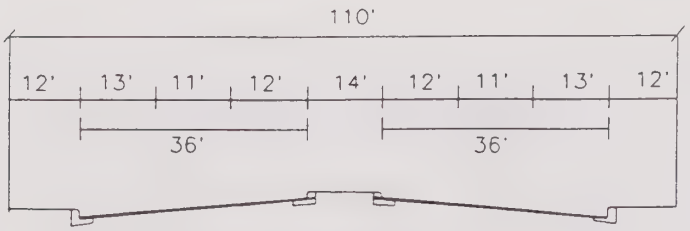


Major–4E

Without Median



With
Raised Median



Major–6
Hamner Avenue

Norco Circulation Element Update

Typical Cross-Sections of Roadways

Not To Scale

Robert Bein, William Frost & Associates
JN 27492 / 5.92

Exhibit 5

Classification	Right of Way	Pavement/ No. of Lanes	Parkway
Local	60'	36' / 2	Equestrian trail on one side
Collector	88'	64' / 4	Equestrian trail on one side
Major-4	100'	80' / 4	10' sidewalk on both sides and, 12' raised median
Major-4E	100'	64'/4	Equestrian trail on both sides
Major-6	120'	92' / 6	12' sidewalk on both sides and 14' raised median or 10' striped median

Exhibit 6 shows the City's revised circulation element. Hamner Avenue is designated as Major-6, while Sixth Street and California Avenue are designated as Major-4E. A deviation from the minimum LOS C standard would be required for Sixth Street and California Avenue as the 2010 build-out traffic would experience LOS worse than C with four through lanes on these streets. Some traffic would be diverted to adjacent collectors which operate at LOS C or better. However, the diversion would not improve the LOS of Sixth Street and California Avenue to a level of C or better. A reduction in the intensity of the build-out commercial development along the streets would be required to maintain the minimum LOS adopted by the City.

Hamner Avenue is classified as Major-6 with a total of six through lanes divided by a raised median. Sidewalks are provided along both sides of the street to maintain the characteristics of the existing classification. Hamner Avenue will be the main arterial serving the I-15 Corridor commercial development along both sides of the street. The Norco Transportation Model projected a decrease in traffic volume at the south end of Hamner Avenue. The reduction could be the result of the assumed full development of commercial zones along Hamner Avenue which increases the attraction of Norco and decreases the volumes of external trips. Traffic volumes also decrease to a level serviceable by a two lane roadway at the north end of Hamner Avenue in the vicinity of Santa Ana River crossing. However,

Norco Circulation Element Update

Revised Circulation Element

Robert Bein, William Frost & Associates

Exhibit 6

this relatively low volume is based on the RIVSAN model assumption that Etiwanda Avenue will be extended across Santa Ana River to connect with Arlington Avenue. RIVSAN model output with the deletion of the Etiwanda crossing is not available at the time of this circulation element update.

North Drive is a short segment of arterial at the border to the City of Riverside. It is classified as Major-4 with a total of four through lanes divided by a raised median. This classification is compatible with the 110' Arterial classification of the City of Riverside.

California Avenue and Sixth Street are classified as Major 4-E with a total of four through lanes divided by striped medians. Equestrian trails and an adjacent 6' parkway will be provided along both sides of the streets, maintaining the existing characteristics of the strip commercial with a Western theme.

River Road is classified as a Major-4 with a total of four through lanes serving the increased traffic between Norco and the future development of the Jurupa Community north of the Santa Ana River. River Road also serves a substantial amount of through traffic between Corona and the Jurupa Community. The Major-4 classification is compatible in pavement width with the 110' River Road cross-section of the City of Corona.

First Street should be widened to the full width of a Collector with a total of four through lanes. Its volumes are relatively high because of high concentration of commercial development and the connection to Lincoln Avenue in Corona.

Second Street west of Hamner Avenue should be widened to the full width of a Collector with a total of four through lanes. Its volumes are relatively high because of high concentration of commercial development and the interchange with I-15.

Hillside Avenue between Sixth Street and Fourth Street should be widened to the full width of a Collector.

Yuma Drive should be classified as a Major-4 with a total of four through lanes. Its volumes are relatively high because of the interchange with I-15 and its extension to First Street. The new classification would be consistent with City of Corona's Circulation Plan.

Estimated build-out traffic on all other Collectors are moderate and would not require widening of the existing width of two or four through lanes.

A link between Fourth Street and Yuma Drive along Hillside Avenue has been tested in the 2010 build-out scenario of the Norco Transportation Model. It was concluded that the

diverted traffic would only marginally warrant a designation of a Collector. The heavy concentration of build-out commercial area along Hamner Avenue attracts a substantial amount of trips and results in predominant east-west movements with relatively less demand for north-south through movements. For the same reason, the proposed hillside developments in the eastern region of the City would require the extension of east-west Collectors (Second Street, Fourth Street and Fifth Street). A north-south Collector would be required to connect to Yuma Drive in the City of Corona. This requirement has not been tested in the Norco Transportation Model because Yuma Drive is loaded heavily by developments in the City of Corona and the RIVSAN model has not coded this link in the current model.

The classification of roadways is basically consistent with the General Plans of the adjacent cities. However, minor differences in pavement width between 2 to 5 feet would occur at the boundary with adjacent cities. These differences are the results of variation in the widths of bike lanes and medians and could be resolved by tapering of roadways in the geometric design stage.

3.2 PUBLIC TRANSPORTATION NETWORK

The Riverside Transit Agency (RTA) operates a fixed route service and a dial-a-ride service for the City of Norco.

The fixed route service for the City is Route 3, originally implemented on March 6, 1989.

The original route was serviced by two vehicles operating thirteen trips per day, Monday through Friday, on an hourly frequency. In January, 1990, Route 3 eliminated one vehicle and obtained a ninety-minute frequency. In the ten quarters of operation, Route 3 has average 1,272 passengers per month for a daily average ridership of 64 passengers. Route 3 has an average performance to date of 4.45 passengers per hour and 0.25 passengers per mile. It is operating with an average subsidy of $5.6 per passenger.

Extensive public outreach has been conducted in the Route 3 service area, especially in Norco and input from various sources have revised the routing which should result in an improved performance. A January, 1992 service change now accommodates service to the Riverside Community College, Norco Campus. Another important change proposed for Route 3 is the extension of service to connect with another route at La Sierra and Arlington, which now has a thirty-minute frequency. This will provide passengers another travel pattern through Norco and would link Route 3 on the north end with the City of Riverside. New destinations will include service to the Department of Motor Vehicles and the Norco

junior and senior high schools. In addition, the fixed route will be enhanced with the addition of another vehicle.

One of the goals of inducing people to ride public transit is to make the service as attractive as possible. Often times, the paradox of public transit is that additional, or improved, service is not introduced until justification can be made the ridership exceeds capacity and that potential passengers indicate that they will not use services until they are improved to convenient transfer possibilities and time schedules, and extensive service area and a high rate of frequency. It is hoped that the service changes proposed will be a realization of the discretionary rider within reasonable limits. The RTA also provides a dial-a-ride service to the City of Norco community. This service is available on a call and response method, where a rider will call a number requesting the time of pickup and destination desired. This service is offered currently at $1.00 per ride and is a benefit to the needy public such as senior citizens and handicapped persons.

3.3 INFRASTRUCTURE NETWORK

3.3.1 WATER SYSTEM

Domestic and irrigation services are provided through the City's Water Department. Major off- and on-site extension of the water facilities, along with payment of appropriate fees are required to provide delivery of the required domestic and fire flow.

3.3.2 SEWAGE SYSTEM

The entire City is within the service area of the City of Norco, which collects and conveys the sewage through its collector systems to the Santa Ana Regional Interceptor Line (SARI) or the City of Corona Treatment Plant. The majority of the City is hooked-up to the sewer system, or is available for hook-up, with on-site septic systems being phased out.

Major on and off-site construction of sewage systems including lift stations and rehabilitation and upsizing of existing sewer mains and treatment plant along with payment of appropriate fees will be required to provide for sufficient level of service.

3.3.3 STORM DRAIN

The City of Norco Master Plan is in existence which require construction of master planned storm drainage and/or nuisance underground facilities along with payment of appropriate drainage fees. Master planned facilities are reviewed and maintained by Riverside County

Flood Control and Water Conservation District (R.C.F.C. & W.D.). Non-master planned facilities are maintained by City of Norco Public Works Department.

R.C.F.C. & W.C. with assistance from the City is responsible to monitor discharge of storm-water runoff to waters of the United States within the Santa Ana Regional Board's jurisdiction.

4. IMPLEMENTATION MEASURES

The City's Circulation element addresses a range of circulation-related issues including the provision of a safe and efficient street system, adequate off-street parking, truck circulation routes, pedestrian, equestrian, and bicycle considerations, and public infrastructure associated with water, sewer, and storm drain systems. Implementation measures are summarized as follows:

4.1 MASTER PLAN OF STREETS

4.1.1. **CITY/REGIONAL CIRCULATION:** Arterial streets within the planned street system will be constructed and maintained according to the Circulation Plan based on standards related to their function and traffic capacity.

Responsible Agency: Public Works/City Engineer/Department of Planning.

Funding Source: Development Fees/Exactions, City Capital Improvements Program, Maintenance Program, and available State and Federal funding.

Time Frame: Ongoing

Related Circulation Element Policies: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7

4.1.2. **TRANSPORTATION SYSTEM MANAGEMENT (TSM):** To maximize the capacity of the existing and planned traffic system, capital improvements such as restriping, spot widening, and traffic signal coordination will be made.

Responsible Agency: Public Works Department

Funding Source: Development Fees/Exactions, City Capital Improvements Program, Maintenance Program, and available State and Federal funding.

Time Frame: Ongoing

Related Circulation Element Policies: 1.5

4.1.3. **TRANSPORTATION DEMAND MANAGEMENT (TDM):** Following the Air Quality Management Plan for the South Coast Air Basin, employers of over 100 employees will be involved in a program aimed at reducing the number of vehicles using the roadway system during peak hours through van-pooling, ride-sharing, staggered work hours and other methods.

Responsible Agency: SCAQMD/City of Norco

Funding Source: Development Fees/Exactions, City Capital Improvements Program, Maintenance Program, and available State and Federal funding.

Time Frame: Ongoing.

Related Circulation Element Policies: 1.9 and 1.10

4.2 PUBLIC TRANSPORTATION PLAN

4.2.1 **BUS SERVICE:** The Riverside Transit District (RTD) will offer fixed route service on local and express routes. Park-and-ride facilities will be provided to promote additional express bus service along the freeway corridor.

Responsible Agency: Riverside Transit District/Caltrans

Funding Source: RTD/Caltrans

Time Frame: Ongoing

Related Circulation Element Policies: 2.1, 2.2, 2.3

4.3 NON-MOTORIZED TRANSPORTATION

4.3.1. **PEDESTRIAN/EQUESTRIAN CIRCULATION:** Pedestrian/Equestrian Trails exist along most City arterial streets and will be constructed as part of the improvements to new arterial roadways to facilitate safe and convenient pedestrian/equestrian movement. In addition, improvements to the equestrian trail system will be implemented according to the Norco Master Plan for Parks, Recreation & Open Space.

Responsible Agency: Public Works Department

Funding Source: Development Fees/Exactions, City Capital Improvements Program, Maintenance Program, and available State and Federal funding.

Time Frame: Ongoing

Related Circulation Element Policies: 2.4, 2.6, 3.2, 3.6

4.3.2 **BICYCLE FACILITIES:** Bikeways will be maintained and provided along most major streets within the City to promote the use of bicycles. These bikeways will be integrated into the overall County bikeway system.

Responsible Agency: Public Works Department

Funding Source: Development Fees/Exactions, City Capital Improvements Program, Maintenance Program, and available State and Federal funding.

Time Frame: Ongoing

Related Circulation Element Policies: 2.5

4.4 PARKING

4.4.1 **OFF-STREET REQUIREMENTS:** The City's Zoning Ordinance includes off-street parking requirements for various types of developments and allowances for joint use of parking facilities where an appropriate mix of uses exists.

Responsible Agency: Department of Planning and Community Development/Public Works Department.

Funding Source: Development Fees/Exactions

Time Frame: Ongoing

Related Circulation Element Policies: 4.1, 4.2

4.5 TRUCK ROUTES

4.5.1 **TRUCK ROUTE DESIGNATION:** Planned primary truck routes will be identified, signed and improved to accommodate truck travel.

Responsible Agency: Department of Planning and Community Development/Public Works Department

Funding Source: City Capital Improvements Program and Maintenance Program/Development Fees/Exactions

Time Frame: Ongoing

Related Circulation Element Policies: 3.3

4.6 INFRASTRUCTURE

4.6.1 WATER SYSTEM: The City's Water Department provides domestic and irrigation services.

Responsible Agency Department: City Water Department

Funding Source: User Fees/Development Fees

Time Frame: Ongoing

Related Circulation Element Policies: None

4.6.2. SEWAGE SYSTEM: The City provides sewage collection and conveys the sewage to the Santa Ana Regional Interceptor Line or the City of Corona Treatment Plant.

Responsible Agency/Department: Public Works Department

Funding Source: User Fees/Development Fees

Time Frame: Ongoing

Related Circulation Element Policies: None

4.6.3 STORM DRAIN SYSTEM: The Riverside County Flood Control and Water Conservation District is responsible for storm drain master planned facilities. The City's Public Works Department maintains non-master planned facilities.

Responsible Agency/Department: RCFC & WD/City Public Works Department

Funding Source: Drainage Fees

Time Frame: Ongoing

Related Circulation Element Policies: None

5. GLOSSARY OF TERMS

ADT (Average Annual Daily Traffic) - The total volume passing a point or segment of a highway facility, in both directions, for one year, divided by the number of days in the year.

Capacity - The maximum rate of flow at which persons or vehicles can be reasonably expected to traverse a point or uniform segment of a lane or roadway during a specified time period under prevailing roadway, traffic, and control conditions; usually expressed as vehicles per hour or persons per hour.

Capital Improvements Program (CIP) - A program administered by City government and reviewed by Planning Commission, which schedules permanent improvements five or six years in the future to fit the City's projected fiscal capability. The program generally is reviewed annually.

Delay - Additional travel time experienced by a driver, passenger, or pedestrian beyond what would reasonably be desired for a given trip.

General Plan - A compendium of the City's policies regarding its long-term development, in the form of a land use and circulation map and accompanying text. The General Plan is a legal document required of each local agency by the State of California.

Goal - A general, overall, and ultimate purpose, aim, or end toward which the City will direct effort.

ICU (Intersection Capacity Utilization) - A fraction (or percentage) to indicate the percentage of total capacity of all approaches of the intersection used by the traffic volumes Levels of Service are assigned to different level of ICU.

Impact Fees - Fees levied on the developer of a project by the City as compensation for otherwise unmitigated impacts the project will produce.

Implementation - Actions, procedures, programs, or techniques that carry out policies.

LOS (Level of Service) - A qualitative measure describing operational conditions with a traffic stream; generally described in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

Policy - A specific statement of principle or of guiding actions which implies clear commitment but is not mandatory. A general direction that a governmental agency sets to follow, in order to meet its goals and objectives before undertaking an action program.

TAZ (Traffic Analysis Zone) - A zone delineated for the purpose of trip generation and attraction in the process of computer travel forecast.

TDM (Transportation Demand Management) - A scheme directed at reducing travel demand by car-pool, telecommute, prolonged work hour per day, and other means of trip reduction.

Traffic Model - A mathematical statement of traffic movement within a city based on observed relationships between the kind and intensity of development in specific areas. A traffic model operates on the theory that trips are produced by persons living in residential areas and are attracted by various non-residential land uses (see "Trip").

Trip - A one-way journey that proceeds from an origin to a destination via a single mode of transportation; the smallest unit of movement considered in transportation studies. Each trip has one "production end," (or origin--often from home, but not always), and one "attraction end," (destination) (see "Traffic Model").

Trip Generation - The dynamics that account for people making trips in automobiles or by means of public transportation. Trip generation is the basis for estimating the level of use for a transportation system and the impact of additional development or transportation facilities on an existing, local transportation system. Trip generations of households are correlated with destinations that attract household members for specific purposes.

Truck Route - A path of circulation required for all vehicles exceeding set weight or axle limits, a truck route follows major arterials through commercial or industrial areas and avoids sensitive areas.

TSM (Transportation System Management) - A scheme directed at optimizing the output of transportation facilities. Typical TSM techniques are ramp metering, High Occupancy Vehicle lanes, highway incident management, etc.